

REMARKS

Reconsideration of this patent application is respectfully requested in view of the foregoing amendments and the following remarks.

The drawings originally submitted with the application on December 4, 2000, are resubmitted with this amendment. A postcard indicating that these drawings were submitted with the application on December 4, 2000, is also submitted herewith.

The substitute abstract has been submitted that is in proper USPTO form.

The Examiner has objected to claims 7, 8, and 16 under 35 U.S.C. 112, first paragraph as containing subject matter which was not described in the specification. Claims 7, 8, and 16 have been amended to more clearly set forth the invention. Specifically, a first equally legged trapezoidal element and a second equally legged trapezoidal element are described in paragraph 2 of page 17 of the specification. This paragraph has been amended to more clearly differentiate the trapezoidal segments. Additionally they are shown in FIG. 6 as reference numerals 31 and 32, respectively. The longitudinal segment between the trapezoidal elements is described in the specification (pg. 17, para. 2) as well as claim 7

as forming the pole shank indicated as reference numeral 7 in FIG. 6. The closed handling axle is common in the art and is commonly used by persons skilled in the construction of electrical machines.

The Examiner has objected to claims 1-17 under 35 U.S.C. 112, second paragraph for failing to particularly point out and distinctly claim the invention. Claim 1 has been cancelled and replaced with new independent claim 18. Claims 6-8 have been amended.

The Examiner has rejected claims 1, 3-10, 12, 13, and 15-17 under 35 U.S.C. 102(b) as being anticipated by *Dukshtau et al.* The Examiner has rejected claims 2, 11 and 14 under 35 U.S.C. 103(a) as being unpatentable over *Dukshtau et al* in view of *Hill*.

Dukshtau discloses a synchronous electrical machine with a laminated rotor. *Dukshtau* has a rotor with separated pole segments. These pole segments are connected with a laminated rotor by a special holding. Due to the separated pole segments, the air gap between the rotor and the stator is not constant around the entire machine. The present invention creates a machine with a nearly constant air gap between rotor and stator which is useful for a constant and calm working of an electrical machine.

Electrical machines with integrated poles as in the present invention are different from electrical machines with separated

poles as in *Dukshtau*. New independent claim 18 describes an electrical machine with a nearly constant air gap between rotor and stator which overcomes the disclosure of *Dukshtau*. Additionally claim 2 has been cancelled and its elements have been included in claim 18.

It is not possible to combine the disclosure of *Dukshtau* and the disclosure of *Hill* because *Hill* shows an electrical machine with integrated poles whereby *Dukshtau* discloses electrical machines with separated poles.

Claims 1 and 2 have been canceled without prejudice, claims 3-17 have been amended and claim 18 has been added. No new matter has been added. Accordingly, the Applicant submits that the claims as presented are patentable.

Early allowance of the amended claim is respectfully requested.

Respectfully submitted,

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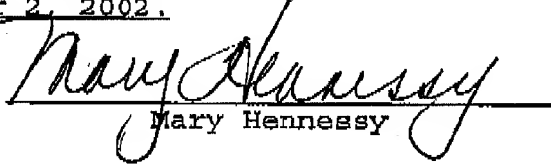
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I hereby certify that this correspondence is being faxed to the
U.S. Patent Office, Attention: Examiner: J. Waks, Group 2834
at (703) 872-9318 on December 2, 2002.



Mary Hennessy

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Applicants: WERNER EBERLE (PCT)

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Serial No. 09/673,468
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ABSTRACT

C5
An electrical machine with a single-pole winding substantially built from bodies, whereby at least one of said bodies is structured from a number of segments at least corresponding with the number of poles of the electrical machine. At least one of the inductively excitable bodies of the electrical machine is substantially assembled from receiving bodies suitable for receiving at least two winding carriers in an operationally fixed manner. The receiving bodies are decoupled from the given pole number of pole pitch of the machine and can be dimensioned depending on the manufacturing tolerance.

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SPECIFICATION

Please amend paragraph 2 on page 17 as follows:

FIG. 6 shows a modified embodiment of a winding carrier 4 in connection with which ~~the~~ pole shank 7 has a largely rectangular profile whose transverse sides each are limited by ~~an~~ a first equally legged trapezoidal element 31 and a second equally legged trapezoidal element 32 ~~(31, 32)~~, whereby ~~the~~ first equally legged trapezoidal element 31 facing the air gap of the electrical machine forms the coil head, and ~~the other~~ second equally legged trapezoidal element 32 is facing the yoke of the carrier segment. The surface of the coil head facing the air gap may be designed in this connection with a cross section in the form of a circular segment whose curvature is dependent on the given circumference of the machine. A uniform expanse of the air gap is assured in this way in conjunction with the non-wound poles of the carrier segments.

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OF CLAIMS

3. (Amended) The electrical machine according to claim 1
~~18, characterized in that wherein said at least two~~ sheet layers
~~used for building up the~~ winding carriers ~~(4)~~ and/or the ~~said at~~
~~least two~~ carrier segments ~~(2, 3, 22, 33, 34)~~ are built from
sheet layers that are pre-configured in the form of laminated
sheet plates, and ~~that wherein~~ the electrical machine is at least
partly assembled from ~~said the~~ laminated sheet plates in the form
of a module construction.

4. (Amended) The electrical machine according to claim 1
~~18, characterized in that the wherein said at least two~~ winding
carriers are completely wound, ~~preferably~~ wound by a machine
before they are mounted.

5. (Amended) The electrical machine according to claim 4,
~~characterized in that the wherein said at least two~~ winding
carriers ~~(4)~~ each are each ~~designed in the form of~~ formed as
profiled bodies ~~with~~ having a coil head ~~(11)~~ and a pole shank
~~(7)~~.

6. (Amended) The electrical machine according to claim 4,

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~~characterized in that the~~ further comprising plug pins that
detachably connect said at least two winding carriers (4) ~~each~~
~~are operationally rigidly but detachably connected with the~~
~~respective~~ receiving body in an operationally rigid manner (2, 3,
22) ~~preferably by means by plug pins (10).~~

7. (Amended) The electrical machine according to claim 4,
~~characterized in that~~ further comprising a first equally legged
trapezoidal element and a second equally legged trapezoidal
element that limit each longitudinal side of a the profile of the
each winding carrier (4) ~~is limited on each longitudinal side by~~
~~an equally legged trapezoidal element, with and a an at least~~
~~approximately~~ substantially rectangular center component being
disposed between said first trapezoidal element and said second
trapezoidal element components, wherein said rectangular center
component ~~forming forms~~ the said pole shank.

8. (Amended) The electrical machine according to claim 7,
~~characterized in that the~~ wherein said cavities (6) have a
profile suitable for receiving ~~in a form locked manner the said~~

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trapezoidal element (33) and said pole shank in a form locked manner, the latter pointing wherein said first trapezoidal element points at the said yoke of the said receiving body in the an operating condition, as well as for receiving the pole shank (7), whereby in the operating condition, the and said second trapezoidal element (31) facing faces away from the said yoke, said trapezoidal element forming and forms the a coil head (11), and wherein the surfaces of the said adjacent non-wound poles of the receiving body jointly form an at least approximately a substantially closed surface pointing at the an air gap of the electrical machine.

9. (Amended) The electrical machine according to claim 4, characterized in that further comprising a projection disposed on the a surface of the each winding carrier (4) pointing at the said yoke of the said receiving body is in each case provided with a projection which, in the operating condition, is in engagement with and a corresponding guide groove in engagement with said projection, wherein said guide groove is disposed located in the a zone of the said yoke of the receiving body in

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said operating condition.

10. (Amended) The electrical machine according to claim 4, ~~characterized in that~~ further comprising a plurality of distinguishable windings ~~are arranged~~ disposed at least on a part of ~~the~~ each winding carrier (4).

11. (Amended) The electrical machine according to claim 4, ~~characterized in that the~~ wherein each winding carriers (4) ~~are provided with~~ comprises a flat wire winding.

12. (Amended) The electrical machine according to claim 1 ~~18, characterized in that the~~ wherein said at least two carrier segments ~~(2, 3, 22, 33, 34)~~ structured from laminated sheet plates are designed in such a way that ~~the~~ individual layers are arranged offset, leaving clear ~~the~~ said cavities (6) provided for receiving ~~the~~ said at least two winding carriers (4), ~~in a way~~ such so that when viewed across ~~the~~ a circumference or ~~the~~ a length of the electrical machine, each individual layer of each carrier segment ~~(2, 3, 22, 33, 34)~~ is ~~in turn~~ structured in a segmented manner, and ~~that the~~ segments of ~~the~~ one layer are

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arranged offset ~~vis-a-vis~~ from the ~~an~~ adjacent layer, ~~and so~~
~~offset preferably~~ by one pole pitch.

13. (Amended) The electrical machine according to claim 12,
~~characterized in that~~ wherein the number of sheet layers used ~~in~~
~~each case~~ for building up ~~the~~ said receiving bodies ~~(2, 3, 22,~~
~~33, 34)~~ is freely selectable depending on the machine output
required ~~in a given case~~.

14. (Amended) The electrical machine according to claim 12,
~~characterized in that the~~ wherein said at least two carrier
segments ~~(2, 3, 22, 33, 34)~~ each are each build up built from
layers of transformer sheets punched out in the form of teeth,
~~preferably~~ from grain-oriented sheet material.

15. (Amended) The electrical machine according to claim 12,
~~characterized in that the~~ wherein said cavities are distributed
over a periphery of said at least two carrier segments ~~(22)~~ are
~~provided both~~ on the a side facing the ~~an~~ interior of the machine
and on the a side facing the ~~an~~ exterior of the machine ~~with~~
~~cavities (6) distributed over the periphery~~ for receiving said at

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least two winding carriers ~~(6)~~ for building up a compensated electrical machine.

16. (Amended) The use of the electrical machine structured in a segmented manner according to claim ~~4~~ 18 as a linear motor within a closed handling axle.

17. (Amended) The use of the electrical machine structured in a segmented manner according to claim ~~4~~ 18, as a motor with an interior or exterior rotor, linear motor, synchronous or asynchronous machine, direct drive, permanently excited machine, or as an electronically commutated machine.

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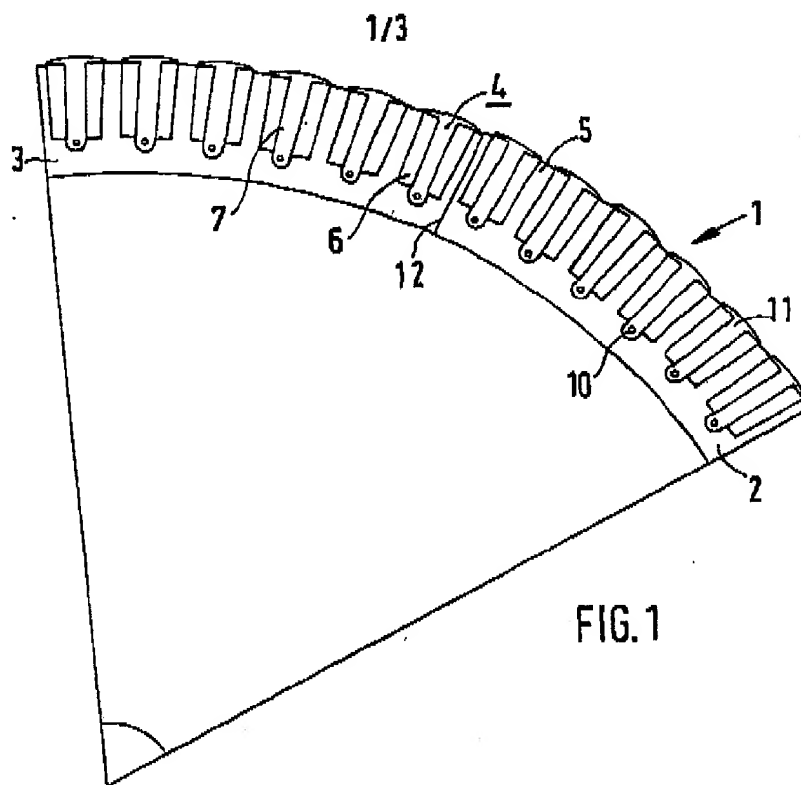


FIG. 1

FIG. 4

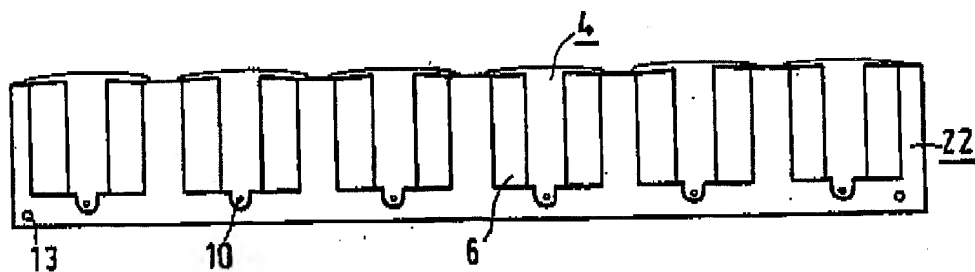
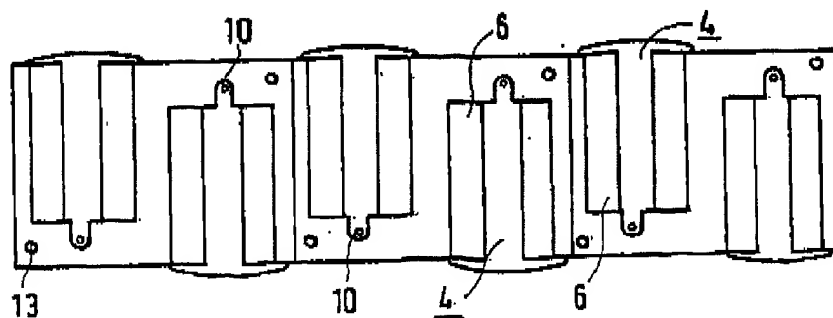
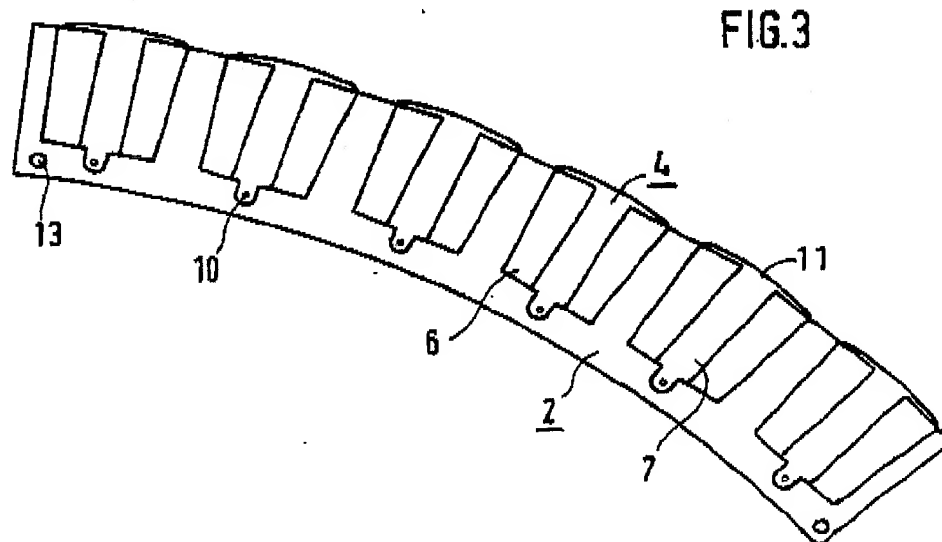
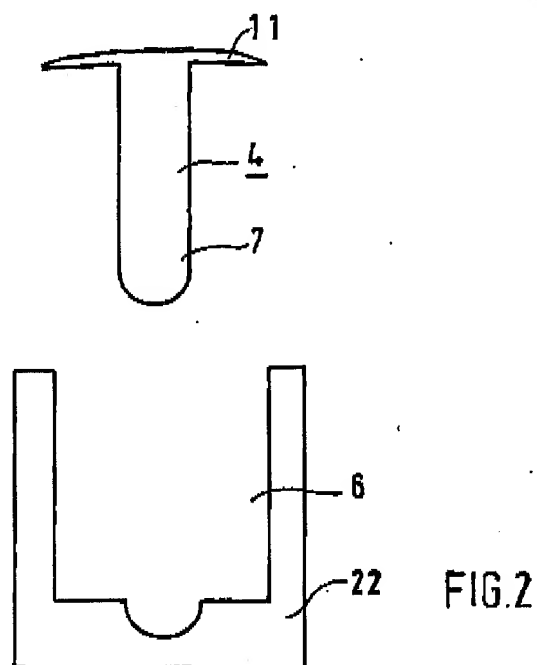


FIG. 5



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FIG. 6

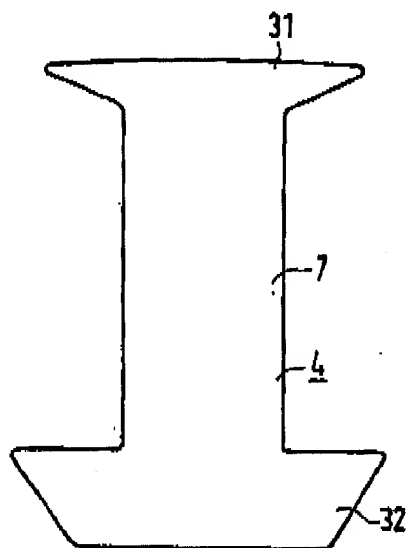


FIG. 7

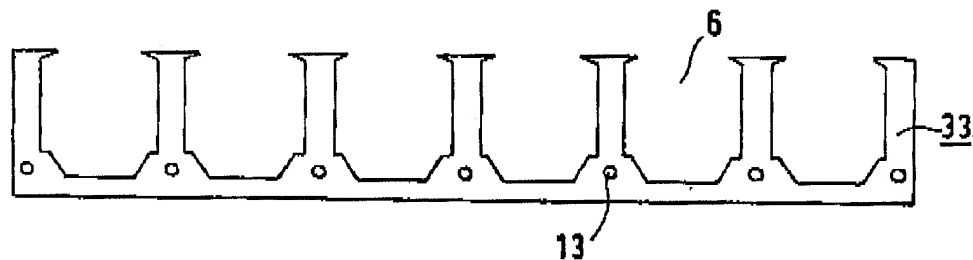


FIG. 8

